



Stuart L. Bailey

Stuart Lawrence Bailey

1905–1984

by Alexander H. Flax

Stuart Lawrence Bailey, former president of Jansky and Bailey, Inc., and vice-president of the Atlantic Research Corporation until his retirement in 1970, died on August 11, 1984, at the age of seventy-eight. Bailey was known for his outstanding personal contributions and pioneering work in three main areas: (1) the development of air navigation radio aids; (2) radio signal propagation measurements, which were applied to the design and location of broadcasting stations; (3) the development of transmission standards for service and interference in AM and FM radio and in television broadcasting.

Stuart Bailey was born on October 7, 1905, in Minneapolis, Minnesota. He received a B.S. in electrical engineering from the University of Minnesota in 1927 and an M.S. in electrical engineering the following year. As an undergraduate, he was active on the staff of W9XI, an experimental radio station at the university. During his graduate work, Bailey was the chief engineer of radio station WLB, which was owned and operated by the university. It was also during these years at the University of Minnesota that Bailey met C. M. Jansky, who was later to play a major role in his professional and personal life.

Bailey spent three years (1928–1930) in Minnesota working

for the U.S. Department of Commerce as a radio engineer in the Lighthouse Service and Airways Division. In 1929 he went to Panama to install two automatic marine radio beacons, one at the entrance to Cristobal Harbor and the other at Cape Mala, 120 miles south of Balboa.

In 1930 his former professor C. M. Jansky contacted him and together they founded Jansky & Bailey, Inc., which pioneered many advances in radio technology over the years. It completed some early work on directional antennas and helped map UHF educational television networks for twenty-one different states. Between 1938 and 1946 the company built and subsequently operated the nation's third—and Washington's first—FM radio station, W3XO, which is WINX-FM.

Stuart Bailey was president of Jansky & Bailey, Inc., from 1953 to 1959, when the company was acquired by Atlantic Research Corporation. He continued working for Atlantic Research until 1970, when he retired as the vice-president and general manager of its electronics and communications division. He continued working as a consultant to the firm for the next ten years.

Stuart Bailey was an excellent organizer and the leader of numerous engineering projects and investigations. He displayed exceptional leadership and organizational skills during World War II in connection with radio frequency anti-jamming practices. After the war, he was a member of various advisory committees dealing with color television, radio propagation, and telecommunications in general.

During World War II Bailey was put in charge of all government contract work performed by Jansky & Bailey, Inc., a great deal of which was done under the U.S. Office of Scientific Research and Development. This work involved a detailed study of all the factors that affect mobile, short-range radio communication, a study of the effects of hills and trees as obstructions to radio transmission from 4 to 116 megacycles, and a detailed analysis of electronic equipment to

determine those characteristics that are important to its operation by the armed services.

In addition, under a Signal Corps contract, Bailey supervised the firm's work on the measurement of many existing and proposed radio antennas for use by the armed forces. He participated in determining the levels of vulnerability to radio transmission jamming of particular pieces of U.S. and captured enemy equipment and also helped to develop methods of reducing the vulnerability levels. In June 1947 Mr. Bailey received a citation from the secretaries of war and navy for his contributions to the U.S. Office of Scientific Research and Development.

Bailey's outstanding achievements included his work for IBM Corporation on the "radio-electric typewriter" in the late 1930s and his assistance to Bell Telephone Laboratories in its selection of the National Radio Astronomy Observatory site in Green Bank, West Virginia. During the 1950s he worked on the Dual-ex system of mobile radio teletype digital record communication (the genesis of the Teleproducts Test Equipment Division, which has become a division of Atlantic Research Corporation). He assisted in the development of transmission standards for the broadcast industry in cooperation with the Federal Communications Commission and also supervised a multiyear tropical signal propagation measuring program in Thailand for the Advanced Research Projects Agency of the U.S. Department of Defense.

Stuart Bailey was active in the Institute of Electrical and Electronics Engineers (IEEE), becoming an associate member in 1928, a member in 1936, a senior member in 1938, and a fellow in that same year. He served as the treasurer of IEEE in 1948, 1961, and 1962 and was elected its president in 1949. He was also a member of the board of directors from 1943 to 1955 and from 1961 to 1962.

Mr. Bailey was an active participant in numerous industrial, governmental, and international committees relating to FM transmission standards, television, propagation in all

ranges of the spectrum, and proposals for regulation. He was consistently well prepared and well informed on the issues, and as a result, he was always an active, intelligent contributor. The work of these committees invariably pertained to highly technical matters, the sense and an understanding of which Bailey was always able to convey in clear, concise language, thus commanding the respect of his fellows.

Stuart Bailey served on the executive committee of the U.S. National Committee of the International Scientific Radio Union. He was chairman of the American Standards Association Sectional Committee on Radio (C-16) from 1953 to 1954 and a member of the board of the Engineer's Joint Council from 1964 to 1966. He was elected to the National Academy of Engineering in 1973 for "outstanding pioneering work in radio signal propagation measurements and their application to station design and location." Other honors bestowed on him included the Outstanding Achievement Award from the University of Minnesota in 1956 for "leadership in development of radio and television." The university further recognized him as a "worldwide leader in the development of radio and television, ever striving to perfect the standards of radio engineering."

Just before being hospitalized in 1984, Stuart Bailey attended the IEEE's centennial celebration in Boston, where he received the Centennial Gold Medal Award for "extraordinary achievement deserving of special recognition." Bailey was a member of Sigma Xi, Tau Beta Pi, and Eta Kappa Nu. In addition, he belonged to the Cosmos Club and the Broadcast Pioneers. He was a registered professional engineer in the District of Columbia.

Stuart Bailey has been described as a man who loved life and lived it to the fullest. He was a gentle man and treated his employees with a respect that inspired their confidence and loyalty. His family meant a great deal to him, and he maintained strong ties with them. His wife, Carol Sue Bailey,

died in 1980. He is survived by his brother Richard Bailey and sister Dorothy Thomas.

Stuart Bailey will be remembered fondly by the numerous friends he maintained through his professional, church, and civic activities.

This tribute is based on biographical materials that appeared in the professional, technical, and general press. It was written by the NAE Membership Office under the editorial direction of the academy's home secretary.